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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/774,134
Filing Date: February 06, 2004
Appellant(s): HOFFMASTER ET AL.

Jeffrey S. Bergman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 17, 2005 appealing from the Office action mailed June 16, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

Application Serial No. 09/924,961 is the parent application of the present application and is presently on appeal before the Board of Patent Appeals and Interferences.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 201-204, 206, 207, 210-212, 217 and 218 are rejected under 35 U.S.C. 102(b) as being anticipated by Hailey (US 5,174,374).

Claim 201, the only independent claim on appeal, is reproduced below:

201. An expandable reaming tool, comprising:

at least two reamer pads operatively coupled to a tool body and configured to be displaced between a retracted position and an expanded position;

at least one blade formed on at least one of the at least two reamer pads;

a plurality of cutting elements disposed on the at least one blade,

wherein the plurality of cutting elements are arranged so as to substantially balance at least one parameter selected from axial force, lateral force, work, and mass between the at least two reamer pads,

wherein the expandable reaming tool is configured to ream while drilling.

Claim 201 reads on the Hailey '374 reference as follows:

An expandable reaming tool **(10)**, comprising:

at least two reamer pads **(24a and 24b, figures 1-2)** operatively coupled to a tool body **(12)** and configured to be displaced between a retracted position **(figure 1)** and an expanded position **(figure 2)**;

at least one blade **(30a, 30b)** formed on at least one of the at least two reamer pads **(24a, 24b)**;

a plurality of cutting elements **(55, column 2, lines 36-44 and 62-68)** disposed on the at least one blade **(30a, 30b)**,

wherein the plurality of cutting elements **(55)** are arranged so as to substantially balance at least one parameter selected from axial force, lateral force, work, and mass between the at least two reamer pads **(24a, 24b)**,

wherein the expandable reaming tool is configured to ream while drilling.

With respect to the limitation that "the plurality of cutting elements are arranged so as to substantially balance at least one parameter selected from axial force, lateral force, work, and mass between the at least two reamer pads", since the two blades (24a and 24b) are disclosed as being **identical** (column 1, lines 28-30 and line 2 of the abstract), the axial force, lateral force, work or/and mass between the two blades (24a and 24b) are substantially balanced as recited.

Regarding the limitation of "wherein the expandable reaming tool is configured to ream while drilling", it is noted that claim 201 does not require a pilot drill bit. It only requires that the expandable reaming tool is configured to ream while drilling". The rotary cutting tool of Hailey

'374 is clearly capable of reaming while drilling because it is designed to cut or drill in both upward and downward directions as disclosed by Hailey '374 in column 2, lines 57-58. In other words, it is capable of following a pilot drill bit and enlarging the hole previously drilled by the pilot drill bit. Therefore the rotary cutting tool of Hailey '374 is "configured to ream while drilling" as recited. In any event, Hailey '374 states in column 2, lines 13-18 that "[t]he prior art known to Applicant is well characterized in Applicant's previously filed U.S. Pat. No. 4,809,793 as issued on Mar. 7, 1989. This patent describes a rotary clean-out tool of the type that would use the cutting blade that is described in the present application." The prior U.S. Pat. No. 4,809,793 to Hailey clearly shows cutting blades disclosed therein being used to ream while drilling in Figures 1B and 1C.

With respect to claims 202-204, 206, 207, 210-212, 217 and 218, these claims are dependent from claim 201 and will stand or fall with claim 201 as pointed out by appellant.

(10) Response to Argument

A. The Pad-Blade-Cutter Limitations

Contrary to appellant's argument that Hailey '374 does not disclose all three of the limitations relating to pads, blades and cutting elements recited in claim 201, Hailey '374 discloses all of the elements called for in claim 201 when "cutting blades 24a, 24b", "insert 30" and "a plurality of cutting elements 55 shown in figures 4-5" of Hailey '374 are respectively considered as "pads", "blades" and "a plurality of cutting elements" as recited. The "pads" as defined by claim 201 do not distinguish from cutting blades 24a, 24b of Hailey '374. The "blades" as defined by claim 201 do not distinguish from inserts 30 of Hailey '374. And, the

"plurality of cutting elements" as defined by claim 201 do not distinguish from cutting elements 55 of Hailey '374.

With regard to appellant's argument that item 55 is described as "an overlay of thermally stable polycrystalline diamond" and not a plurality of cutting elements, Figure 4 clearly shows this overlay of thermally stable polycrystalline diamond 55 comprising 30 "cutting elements", i.e., 15 cutting elements on the wider portion 50, 14 cutting elements on the narrower lower portion 52 and 1 cutting element in the transition zone between the wider portion 50 and narrower portion 52. These 30 cutting elements are also shown in Figures 3 and 5. They are the protruded portions defined between adjacent grooves or recesses.

B. The Balancing Limitations

Contrary to appellant's argument, Hailey '374 explicitly discloses in the abstract, lines 1-3 that "[a] dual blade cutter head for a rotary cutting tool which consists of two identical blades disposed in opposed position" and in column 1, lines 28-30 that "[e]ach of the two cutting blades is identical as they function in pairs in opposed position with right-turn edge surfaces formed with selected hardfacing." Since the two blades 24a and 24b of Hailey '374 are identical, they are at least substantially mass balance about the axis of rotation of the reaming tool as called for in claim 201. The arrangement of identical cutting elements on identical locations on identical blades 24a and 24b of Hailey '374 inherently contributes to the balance of mass between the two blades 24a and 24b. In fact, we were told by appellant in Paragraph [0054] of the present specification that reaming pads can be made to substantially mass balance the reaming tool about an axis of rotation of the reaming tool by providing "substantially identical reamer pads"

arranged "symmetrically about the axis of rotation" of the reamer tool. Appellant's now argument that Hailey '374's cutting elements on the two identical blades 24a and 24b are not arranged so as to substantially balance at least the mass between the two blades contradict with appellant's original disclosure in Paragraph [0054].

Although the examiner believes that the identicalness of the blades 24a and 24b of Hailey '374 would also result in a substantially balanced axial force, lateral force, and work (in addition to mass) between the two blades, in order to meet the language of claim 201, only one parameter, i.e., "mass" needs to be substantially balanced between the blades 24a and 24b.

Appellant further argues that "balancing" as described in the specification refers not only to balancing of properties across reamer pads, but also across cutting elements within cutting blades of the reamer pads and that the forces, mass and work in Hailey '374 would not be capable of being balanced across the cutting elements of blades 24a and 24b. First of all, the specification is completely silent regarding the "mass" balance across the cutting elements (see Paragraph [0054]). Secondly, the feature upon which appellant relies (i.e., "balancing across cutting elements within cutting blades of the reamer pads") is not recited in the rejected claims. What is called for in claim 201 regarding the "balancing" limitation is "wherein the plurality of cutting elements are arranged as to substantially balance at least one parameter selected from axial force, lateral force, work, and mass between the at least two reamer pads" (emphasis added).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

B. The Ream While Drilling Limitation

Appellant argues that Hailey '374 fails to disclose what one of ordinary skill in the art would consider to be a reamer. The Merriam-Webster Online dictionary defines a "reamer" as "one that reams: as a rotating finishing tool with cutting edges used to enlarge or shape a hole". Based on this definition, the rotary cutting tool of Hailey '374 is clearly a reamer since it is a rotating finishing tool with cutting edges to enlarge or shape a hole.

Regarding appellant's argument concerning the manner in which the Hailey '374 tool is utilized, claim 201 is directed to an expandable reaming tool, not a method of using an expandable reaming tool. Therefore, the manner in which the Hailey '374 tool is used is irrelevant. Further, claim 201 clearly does not preclude the use of the reaming tool to cut sediment and deposits or the upward and downward movement of the tool in the manner suggested by Hailey '374.

Appellant's argument that the cutting blades 24a and 24b of Hailey '374 are configured so as to only be capable of cutting when displaced in an upward direction is unfounded. There cannot be found anywhere in the Hailey '374 patent where it discloses that the cutting blades are designed to cut or drill only in an upward direction. In fact, according to column 2, lines 52-58 of Hailey '374, the blades are capable of cutting in both upward and downward directions. Further, Hailey '374 clearly discloses in column 2, lines 65-68 that "the placement and depth of hardfacing along the arcuate edge of the blades is subject to change, particularly for cutting certain deposits that may be encountered.

Appellant refers to Figure 3 of Hailey '374 and argues that because there is no cutting structure located at lower points 38a and 38b of cutting blades 24a and 24b when the blades are in their expanded state, the blades of Hailey '374 cannot ream while drilling. This argument is incorrect. Since the rotary cutting tool of Hailey '374 is a reamer, it is not designed to cut the entire bottom of a borehole. It only enlarges a hole drilled previously by a pilot drill bit below it (see figure 1B and 1C of U.S. Patent No. 4,809,793 to Hailey for example). It is not necessary to provide cutting structure to portions 38a and 38b on blades 24a and 24b because these portions (at their radial locations) follow the path that has been cut by cutting elements on the pilot drill bit.

It should be noted that claim 201 does not require a pilot drill bit. It only requires that the expandable reaming tool is configured to ream while drilling". The rotary cutting tool of Hailey '374 is clearly capable of reaming while drilling because it is designed to cut or drill in both upward and downward directions as disclosed by Hailey '374 in column 2, lines 57-58. In other words, it is capable of following a pilot drill bit and enlarging the hole previously drilled by the pilot drill bit. Therefore the rotary cutting tool of Hailey '374 is "configured to ream while drilling" as recited.

In any event, assuming that the cleanout tool of Hailey '374 must have a pilot bit at its lower end to meet the claimed limitation "configured to ream while drilling", this is exactly what is disclosed, taught or suggested by Hailey '374. According to the following disclosure, Figure 1 in Hailey '374 only shows a vertical section of a portion of the clean-out tool. The remaining portion of the cleanout tool can be seen in his prior U.S. Patent No. 4,809,793:

Hailey '374 disclose in column 1, lines 13-21:

> "The prior art known to Applicant is well characterized in Applicant's previously filed U.S. Pat. No. 4,809,793 as issued on Mar. 7, 1989. This patent describes a rotary clean-out tool of the type that would use the cutting blade that is described in the present application. Thus, the tubing clean-out tool includes fluid pressure responsive linear actuators that function above the cutting blade assemblies to expand and retract the blade to operational attitude." (emphasis added);

column 1, lines 51-53:

> "FIG. 1 is a vertical section of a portion of clean-out tool illustrating the cutting blade assembly when in closed position." (emphasis added);

column 1, lines 65-67:

> "FIG. 1 is an idealized sectional view of a portion of rotary clean-out tool 10 such as that described in detail in Applicant's U.S. Pat. No. 4,809,793." (emphasis added);

and column 2, lines 16-20:

> "It should be understood that there is additional fluid control detail and sealing arrangement provided in tool 10 as well as internal fluid passages that lead around the cavity 22, and such detail is readily apparent form a study of the U.S. Pat. No. 4,809,793." (emphasis added)

Figures 1B and 1C of the U.S. Patent No. 4, 809,793 shows the clean-out tool of Hailey '374 and '793 in operation. The drilling operation is performed by a pilot bit 8 and the reaming operation is performed by blades 16. What else can it be but "reaming while drilling"?

The examiner does not agree with appellant's contention that the disclosure of U.S. Patent No. 4,809,793 (Hailey '793) was relied on the first time in the final Office action in rejecting the claims. The prior Hailey patent '793 is a part of the latter Hailey patent '374 because Hailey '374 states as such in column 1, lines 13-21, lines 51-53 and 65-67 as cited above. Hailey '374 states that what is shown or disclosed in the disclosure of his patent '374 is only a portion of the entire tool disclosed in his prior patent '793. In this light, the complete

disclosure of the Hailey '374 includes the remaining part of the clean-out tool disclosed in his prior patent '793. As such, the U.S. Patent No. 4,809,793 (Hailey '793) was not relied on the first time in the final Office, but it was relied on at the moment the Hailey '374 patent was applied to reject the claims in the first Office action, not at the time of the final rejection.

The reasons that the Hailey '793 reference was not brought up to appellant's attention by the examiner until the Final rejection are: (1) the limitation of "configured to ream while drilling" was not added to claim 201 and argued by appellant until after the first rejection; (2) appellant's failure to see the reference in the applied Hailey patent '374 to his prior patent (Hailey '793) that shows the remaining part of the clean-out tool and the complete cleanout tool in reaming while drilling operation.

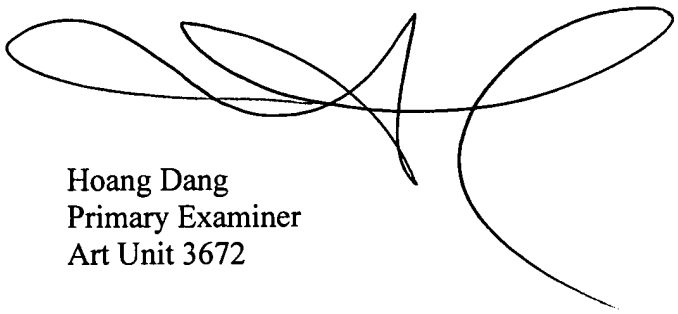
Contrary to appellant's argument, there is only one ground of rejection of the claims in the final rejection and on appeal. The ground of rejection is 35 U.S.C. 102(b), the claims are anticipated by Hailey (US 5,174,374). The single reference to Hailey '374 discloses, teaches or suggests the complete expandable reaming tool as claimed. The prior Hailey '793 patent shows the remaining portion of the clean-out tool disclosed in Hailey '374. But Hailey '374 is the one that refers us to Hailey '793 to see the rest of the tool, NOT the examiner.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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